## SEQUENCE LISTING

```
<110> THORPE, PHILIP E.
      RAN, SOPHIA
<120> CANCER TREATMENT KITS USING ANTIBODIES TO AMINOPHOSPHOLIPIDS
<130> 4001.002282
<140> UNKNOWN
<141> 1999-07-12
<160> 5
<170> PatentIn Ver. 2.0
<210> 1
<211> 2149
<212> DNA
<213> Homo sapiens
<400> 1
cagetgaete aggeaggete catgetgaac ggteacacag agaggaaaca ataaatetea 60
gctactatgc aataaatatc tcaagtttta acgaagaaaa acatcattgc agtgaaataa 120
aaaattttaa aattttagaa caaagctaac aaatggctag ttttctatga ttcttcttca 180
aacqctttct ttqaqqqqqa aaqaqtqaaa caaaqaaqqa gttttacctq aaataaqaa 240
ctagttttag aggtcagaag aaaggagcaa gttttgcgag aggcacggaa ggagtgtgct 300
ggcagtacaa tgacagtttt cettteettt gettteeteg etgecattet gacteacata 360
gggtgcagca atcagcgccg aagtccagaa aacagtggga gaagatataa ccggattcaa 420
catgggcaat gtgcctacac tttcattctt ccagaacacg atggcaactg tcgtgagagt 480
acgacagacc agtacaacac aaacgctctg cagagagatg ctccacacgt ggaaccggat 540
ttctcttccc agaaacttca acatctggaa catgtgatgg aaaattatac tcagtggctg 600
caaaaacttq aqaattacat tqtqqaaaac atqaaqtcqq aqatqqccca qatacaqcaq 660
aatgcagttc agaaccacac ggctaccatg ctggagatag gaaccagect cctctctcag 720
actgcagage agaccagaaa gctgacagat gttgagaccc aggtactaaa tcaaacttct 780
cqacttqaqa tacaqctqct qqaqaattca ttatccacct acaaqctaqa qaaqcaactt 840
cttcaacaga caaatgaaat cttgaagatc catgaaaaaa acagtttatt agaacataaa 900
atcttagaaa tggaaggaaa acacaaggaa gagttggaca ccttaaagga agagaaagag 960
aaccttcaag gcttggttac tcgtcaaaca tatataatcc aggagctgga aaagcaatta 1020
aacagagcta ccaccaacaa cagtgtcctt cagaagcagc aactggagct gatggacaca 1080
gtccacaacc ttgtcaatct ttgcactaaa gaaggtgttt tactaaaggg aggaaaaaga 1140
gaggaagaga aaccatttag agactgtgca gatgtatatc aagctggttt taataaaagt 1200
ggaatctaca ctatttatat taataatatg ccagaaccca aaaaggtgtt ttgcaatatg 1260
gatgtcaatg ggggaggttg gactgtaata caacatcgtg aagatggaag tctagatttc 1320
caaagaggct ggaaggaata taaaatgggt tttggaaatc cctccggtga atattggctg 1380
gggaatgagt ttatttttgc cattaccagt cagaggcagt acatgctaag aattgagtta 1440
atggactggg aagggaaccg agcctattca cagtatgaca gattccacat aggaaatgaa 1500
aagcaaaact ataggttgta tttaaaaggt cacactggga cagcaggaaa acagagcagc 1560
ctgatcttac acggtgctga tttcagcact aaagatgctg ataatgacaa ctgtatgtgc 1620
aaatgtgccc tcatgttaac aggaggatgg tggtttgatg cttgtggccc ctccaatcta 1680
aatggaatgt tctatactgc gggacaaaac catggaaaac tgaatgggat aaagtggcac 1740
tacttcaaaq qqcccagtta ctccttacgt tccacaacta tqatqattcq acctttaqat 1800
ttttgaaagc gcaatgtcag aagcgattat gaaagcaaca aagaaatccg gagaagctgc 1860
caggtgagaa actgtttgaa aacttcagaa gcaaacaata ttgtctccct tccagcaata 1920
agtqqtaqtt atgtgaagtc accaaggttc ttgaccgtga atctggagcc gtttgagttc 1980
acaagagtct ctacttgggg tgacagtgct cacgtggctc gactatagaa aactccactg 2040
actgtcgggc tttaaaaagg gaagaaactg ctgagcttgc tgtgcttcaa actactactg 2100
```

actgtcgggc tttaaaaagg gaagaaactg ctgagcttgc tgtgcttcaa actactactg 2100 qaccttattt tggaactatg gtagccaqat gataaatatg gttaatttc 2149

<210> 2

<211> 498

<212> PRT

<213> Homo sapiens

<400> 2

Met Thr Val Phe Leu Ser Phe Ala Phe Leu Ala Ala Ile Leu Thr His 1 5 10 15

Ile Gly Cys Ser Asn Gln Arg Arg Ser Pro Glu Asn Ser Gly Arg Arg
20 25 30

Tyr Asn Arg Ile Gln His Gly Gln Cys Ala Tyr Thr Phe Ile Leu Pro

Glu His Asp Gly Asn Cys Arg Glu Ser Thr Thr Asp Gln Tyr Asn Thr
50 55 60

Asn Ala Leu Gln Arg Asp Ala Pro His Val Glu Pro Asp Phe Ser Ser 65 70 75 80

Gln Lys Leu Gln His Leu Glu His Val Met Glu Asn Tyr Thr Gln Trp

Leu Gln Lys Leu Glu Asn Tyr Ile Val Glu Asn Met Lys Ser Glu Met 100 105 110

Ala Gln Ile Gln Gln Asn Ala Val Gln Asn His Thr Ala Thr Met Leu 115 120 125

Glu Ile Gly Thr Ser Leu Leu Ser Gln Thr Ala Glu Gln Thr Arg Lys 130 135 140

Leu Thr Asp Val Glu Thr Gln Val Leu Asn Gln Thr Ser Arg Leu Glu 145 150 155 160

Ile Gln Leu Leu Glu Asn Ser Leu Ser Thr Tyr Lys Leu Glu Lys Gln 165 170 175

Leu Leu Gln Gln Thr Asn Glu Ile Leu Lys Ile His Glu Lys Asn Ser 180 185 190

Leu Leu Glu His Lys Ile Leu Glu Met Glu Gly Lys His Lys Glu Glu
195 200 205

Leu Asp Thr Leu Lys Glu Glu Lys Glu Asn Leu Gln Gly Leu Val Thr 210 215 220

Arg Gln Thr Tyr Ile Ile Gln Glu Leu Glu Lys Gln Leu Asn Arg Ala 225 230 235 240

Thr Thr Asn Asn Ser Val Leu Gln Lys Gln Gln Leu Glu Leu Met Asp 245 250 255

Thr Val His Asn Leu Val Asn Leu Cys Thr Lys Glu Gly Val Leu Leu 260 265 270

Lys Gly Gly Lys Arg Glu Glu Glu Lys Pro Phe Arg Asp Cys Ala Asp 275 280 285

Val Tyr Gln Ala Gly Phe Asn Lys Ser Gly Ile Tyr Thr Ile Tyr Ile 290 295 300

Asn Asn Met Pro Glu Pro Lys Lys Val Phe Cys Asn Met Asp Val Asn 305 310 315 320

Gly Gly Gly Trp Thr Val Ile Gln His Arg Glu Asp Gly Ser Leu Asp 325 330 335

Phe Gln Arg Gly Trp Lys Glu Tyr Lys Met Gly Phe Gly Asn Pro Ser 340 345 350

Gly Glu Tyr Trp Leu Gly Asn Glu Phe Ile Phe Ala Ile Thr Ser Gln 355 360 365

Arg Gln Tyr Met Leu Arg Ile Glu Leu Met Asp Trp Glu Gly Asn Arg 370 375 380

Ala Tyr Ser Gln Tyr Asp Arg Phe His Ile Gly Asn Glu Lys Gln Asn

Tyr Arg Leu Tyr Leu Lys Gly His Thr Gly Thr Ala Gly Lys Gln Ser 405 410 415

Ser Leu Ile Leu His Gly Ala Asp Phe Ser Thr Lys Asp Ala Asp Asn 420 425 430

Asp Asn Cys Met Cys Lys Cys Ala Leu Met Leu Thr Gly Gly Trp Trp
435 440 445

Phe Asp Ala Cys Gly Pro Ser Asn Leu Asn Gly Met Phe Tyr Thr Ala 450 455 460

Gly Gln Asn His Gly Lys Leu Asn Gly Ile Lys Trp His Tyr Phe Lys 465 470 475 480

Gly Pro Ser Tyr Ser Leu Arg Ser Thr Thr Met Met Ile Arg Pro Leu 485 490 495

Asp Phe

<210> 3

<211> 2269

<212> DNA

<213> Homo sapiens

<400> 3

tgggttggtg tttatctcct cccagccttg agggagggaa caacactgta ggatctgggg 60 agagaggaac aaaggaccgt gaaagctgct ctgtaaaagc tgacacagcc ctcccaagtg 120

```
agcaggactg ttcttcccac tgcaatctga cagtttactg catgcctgga gagaacacag 180
caqtaaaaac caqqtttqct actqqaaaaa qaqqaaaqaq aaqactttca ttqacqqacc 240
cagccatggc agcgtagcag ccctgcgttt cagacggcag cagctcggga ctctggacgt 300
gtgttttgccc tcaagtttgc taagctgctg gtttattact gaagaaagaa tgtggcagat 360
tgttttcttt actctgagct gtgatcttgt cttggccgca gcctataaca actttcggaa 420
gagcatggac agcataggaa agaagcaata tcaggtccag catgggtcct gcagctacac 480
tttcctcctq ccaqaqatgq acaactqccg ctcttcctcc aqcccctacq tgtccaatgc 540
tqtqcaqaqq qacqcqccqc tcqaatacqa tqactcqqtq caqaqqctqc aaqtqctqqa 600
gaacatcatg gaaaacaaca ctcagtggct aatgaagctt gagaattata tccaggacaa 660
catgaagaaa gaaatggtag agatacagca gaatgcagta cagaaccaga cggctgtgat 720
gatagaaata gggacaaacc tgttgaacca aacagctgag caaacgcgga agttaactga 780
tqtqqaaqcc caaqtattaa atcaqaccac qaqacttqaa cttcaqctct tqqaacactc 840
cctctcgaca aacaaattgg aaaaacagat tttggaccag accagtgaaa taaacaaatt 900
qcaaqataaq aacaqtttcc taqaaaaqaa qqtqctaqct atqqaaqaca aqcacatcat 960
ccaactacag tcaataaaag aagagaaaga tcagctacag gtgttagtat ccaagcaaaa 1020
ttccatcatt gaagaactag aaaaaaaaat agtgactgcc acggtgaata attcagttct 1080
tcaaaagcag caacatgatc tcatggagac agttaataac ttactgacta tgatgtccac 1140
atcaaactca qctaaqqacc ccactqttqc taaaqaaqaa caaatcaqct tcaqaqactq 1200
tqctqaaqta ttcaaatcaq qacacaccac aaatqqcatc tacacqttaa cattccctaa 1260
ttctacagaa gagatcaagg cctactgtga catggaagct ggaggaggcg ggtggacaat 1320
tattcaqcqa cqtgaqqatg qcaqcqttga ttttcaqaqg acttggaaag aatataaagt 1380
gggatttggt aaccettcag gagaatattg gctgggaaat gagtttgttt cgcaactgac 1440
taatcagcaa cgctatgtgc ttaaaataca ccttaaagac tgggaaggga atgaggctta 1500
ctcattgtat gaacatttct atctctcaag tgaagaactc aattatagga ttcaccttaa 1560
aggacttaca qqqacaqccq qcaaaataaq caqcatcaqc caaccaqqaa atqattttaq 1620
careaaggat ggagadaagg acaaatgtat ttgcaaatgt toaccaatgc toaccaggagg 1600
ctggtggttt gatgcatgtg gtccttccaa cttgaacgga atgtactatc cacagaggca 1740
gaacacaaat aagttcaacg gcattaaatg gtactactgg aaaggctcag gctattcgct 1800
caaggccaca accatgatga teegaccage agatttetaa acateecagt ecacetgagg 1860
aactgtctcg aactattttc aaagacttaa gcccagtgca ctgaaagtca cggctgcgca 1920
ctgtgtcctc ttccaccaca gagggcgtgt gctcggtgct gacgggaccc acatgctcca 1980
gattagagec tgtaaacttt atcacttaaa ettgeateae ttaaeggaec aaageaagae 2040
cctaaacatc cataattqtq attaqacaqa acacctatqc aaaqatqaac ccqaqqctqa 2100
gaatcaqact gacagtttac agacgctgct gtcacaacca agaatgttat gtgcaagttt 2160
atcagtaaat aactggaaaa cagaacactt atgttataca atacagatca tcttggaact 2220
gcattettet gageactgtt tatacactgt gtaaatacce atatgteet
                                                                  2269
<210> 4
<211> 496
<212> PRT
<213> Homo sapiens
<400> 4
Met Trp Gln Ile Val Phe Phe Thr Leu Ser Cys Asp Leu Val Leu Ala
                                                         15
 1
Ala Ala Tyr Asn Asn Phe Arg Lys Ser Met Asp Ser Ile Gly Lys Lys
                                 25
Gln Tyr Gln Val Gln His Gly Ser Cys Ser Tyr Thr Phe Leu Leu Pro
Glu Met Asp Asn Cys Arg Ser Ser Ser Pro Tyr Val Ser Asn Ala
     50
Val Gln Arg Asp Ala Pro Leu Glu Tyr Asp Asp Ser Val Gln Arg Leu
65
                     70
                                         75
```

- Gln Val Leu Glu Asn Ile Met Glu Asn Asn Thr Gln Trp Leu Met Lys 85 90 95
- Leu Glu Asn Tyr Ile Gln Asp Asn Met Lys Lys Glu Met Val Glu Ile 100 105 110
- Gln Gln Asn Ala Val Gln Asn Gln Thr Ala Val Met Ile Glu Ile Gly 115 120 125
- Thr Asn Leu Leu Asn Gln Thr Ala Glu Gln Thr Arg Lys Leu Thr Asp 130 135 140
- Val Glu Ala Gln Val Leu Asn Gln Thr Thr Arg Leu Glu Leu Gln Leu 145 150 155 160
- Leu Glu His Ser Leu Ser Thr Asn Lys Leu Glu Lys Gln Ile Leu Asp 165 170 175
- Gln Thr Ser Glu Ile Asn Lys Leu Gln Asp Lys Asn Ser Phe Leu Glu 180 185 190
- Lys Lys Val Leu Ala Met Glu Asp Lys His Ile Ile Gln Leu Gln Ser 195 200 205
- Ile Lys Clu Glu Lys Asp Cln Lou Gln Val Lou Val Ser Lys Cln Asn 210 215 220
- Ser Ile Ile Glu Glu Leu Glu Lys Lys Ile Val Thr Ala Thr Val Asn 225 230 235 240
- Asn Ser Val Leu Gln Lys Gln Gln His Asp Leu Met Glu Thr Val Asn 245 250 255
- Asn Leu Leu Thr Met Met Ser Thr Ser Asn Ser Ala Lys Asp Pro Thr 260 265 270
- Val Ala Lys Glu Glu Gln Ile Ser Phe Arg Asp Cys Ala Glu Val Phe 275 280 285
- Lys Ser Gly His Thr Thr Asn Gly Ile Tyr Thr Leu Thr Phe Pro Asn 290 295 300
- Ser Thr Glu Glu Ile Lys Ala Tyr Cys Asp Met Glu Ala Gly Gly 305 310 315 320
- Gly Trp Thr Ile Ile Gln Arg Arg Glu Asp Gly Ser Val Asp Phe Gln 325 330 335
- Arg Thr Trp Lys Glu Tyr Lys Val Gly Phe Gly Asn Pro Ser Gly Glu 340 345 350
- Tyr Trp Leu Gly Asn Glu Phe Val Ser Gln Leu Thr Asn Gln Gln Arg 355 360 365
- Tyr Val Leu Lys Ile His Leu Lys Asp Trp Glu Gly Asn Glu Ala Tyr 370 375 380

Ser Leu Tyr Glu His Phe Tyr Leu Ser Ser Glu Glu Leu Asn Tyr Arg 385 390 395 400

Ile His Leu Lys Gly Leu Thr Gly Thr Ala Gly Lys Ile Ser Ser Ile
405 410 415

Ser Gln Pro Gly Asn Asp Phe Ser Thr Lys Asp Gly Asp Asn Asp Lys 420 425 430

Cys Ile Cys Lys Cys Ser Gln Met Leu Thr Gly Gly Trp Trp Phe Asp 435 440 445

Ala Cys Gly Pro Ser Asn Leu Asn Gly Met Tyr Tyr Pro Gln Arg Gln 450 455 460

Asn Thr Asn Lys Phe Asn Gly Ile Lys Trp Tyr Tyr Trp Lys Gly Ser 470 475 480

Gly Tyr Ser Leu Lys Ala Thr Thr Met Met Ile Arg Pro Ala Asp Phe 485 490 495

<210> 5

<211> 495

<212> PRT

<213> Homo sapiens

<400> 5

Met Trp Gln Ile Val Phe Phe Thr Leu Ser Cys Asp Leu Val Leu Ala 1 5 10 15

Ala Ala Tyr Asn Asn Phe Arg Lys Ser Met Asp Ser Ile Gly Lys Lys 20 25 30

Gln Tyr Gln Val Gln His Gly Ser Cys Ser Tyr Thr Phe Leu Leu Pro 35 40 45

Glu Met Asp Asn Cys Arg Ser Ser Ser Pro Tyr Val Ser Asn Ala
50 55 60

Val Gln Arg Asp Ala Pro Leu Glu Tyr Asp Phe Ser Ser Gln Lys Leu 65 70 75 80

Gln His Leu Glu His Val Met Glu Asn Tyr Thr Gln Trp Leu Gln Lys 85 90 95

Leu Glu Asn Tyr Ile Val Glu Asn Met Lys Ser Glu Met Ala Gln Ile 100 105 110

Gln Gln Asn Ala Val Gln Asn His Thr Ala Thr Met Leu Glu Ile Gly
115 120 125

- Thr Ser Leu Leu Ser Gln Thr Ala Glu Gln Thr Arg Lys Leu Thr Asp 135 Val Glu Thr Gln Val Leu Asn Gln Thr Ser Arg Leu Glu Ile Gln Leu 150 155 Leu Glu Asn Ser Leu Ser Thr Tyr Lys Leu Glu Lys Gln Leu Leu Gln 165 170 Gln Thr Asn Glu Ile Leu Lys Ile His Glu Lys Asn Ser Leu Leu Glu 185 His Lys Ile Leu Glu Met Glu Gly Lys His Lys Glu Glu Leu Asp Thr 200 Leu Lys Glu Glu Lys Glu Asn Leu Gln Gly Leu Val Thr Arg Gln Thr 210 215 Tyr Ile Ile Gln Glu Leu Glu Lys Gln Leu Asn Arg Ala Thr Thr Asn 230 Asn Ser Val Leu Gln Lys Gln Gln Leu Glu Leu Met Asp Thr Val His Asn Leu Val Asn Leu Ser Thr Lys Glu Gly Val Leu Leu Lys Gly Gly 265 250 Lys Arg Glu Glu Lys Pro Phe Arg Asp Cys Ala Asp Val Tyr Gln Ala Gly Phe Asn Lys Ser Gly Ile Tyr Thr Ile Tyr Ile Asn Asn Met 290 295 Pro Glu Pro Lys Lys Val Phe Cys Asn Met Asp Val Asn Gly Gly 310 Trp Thr Val Ile Gln His Arg Glu Asp Gly Ser Leu Asp Phe Gln Arg 330 Gly Trp Lys Glu Tyr Lys Met Gly Phe Gly Asn Pro Ser Gly Glu Tyr 340 345
- Trp Leu Gly Asn Glu Phe Ile Phe Ala Ile Thr Ser Gln Arg Gln Tyr 365

  Met Leu Arg Ile Glu Leu Met Asp Trp Glu Gly Asn Arg Ala Tyr Ser 370

  Gln Tyr Asp Arg Phe His 390

  Glv Asn Glu Lys Gln Asn Tyr Arg Leu 400
- 405 410 415

  Leu His Gly Ala Asp Phe Ser Thr Lys Asp Ala Asp Asn Asp Asn Cys

420

Tyr Leu Lys Gly His Thr Gly Thr Ala Gly Lys Gln Ser Ser Leu Ile

Met Cys Lys Cys Ala Leu Met Leu Thr Gly Gly Trp Trp Phe Asp Ala 435 440 445

Cys Gly Pro Ser Asn Leu Asn Gly Met Phe Tyr Thr Ala Gly Gln Asn 450 455 460

His Gly Lys Leu Asn Gly Ile Lys Trp His Tyr Phe Lys Gly Pro Ser 465 470 475 480

Tyr Ser Leu Arg Ser Thr Thr Met Met Ile Arg Pro Leu Asp Phe 485 490 495

## SEOUENCE LISTING

<110> THORPE, PHILIP E. RAN, SOPHIA

<120> CANCER TREATMENT KITS USING ANTIBODIES TO AMINOPHOSPHOLIPIDS

<130> 4001.002282

<140> UNKNOWN

<141> 1999-07-12

<160> 5

<170> PatentIn Ver. 2.0

<210> 1

<211> 2149

<212> DNA

<213> Homo sapiens

<100> 1

cagctgactc aggcaggctc catgctgaac ggtcacacag agaggaaaca ataaatctca 60 qctactatqc aataaatatc tcaaqtttta acqaaqaaaa acatcattqc aqtgaaataa 120 aaaattttaa aattttagaa caaagctaac aaatggctag ttttctatga ttcttcttca 180 aacgctttct ttgaggggga aagagtcaaa caaacaagca gttttacctg aaataaagaa 240 ctaqttttag aggtcagaag aaaggagcaa gttttgcgag aggcacggaa ggagtgtgct 300 ggcagtacaa tgacagtttt cctttccttt gctttcctcg ctgccattct gactcacata 360 gggtgcagca atcagcgccg aagtccagaa aacagtggga gaagatataa ccggattcaa 420 catgggcaat gtgcctacac tttcattctt ccagaacacg atggcaactg tcgtgagagt 480 acqacagacc agtacaacac aaacqctctg cagagagatg ctccacacgt ggaaccggat 540 ttctcttccc agaaacttca acatctggaa catgtgatgg aaaattatac tcagtggctg 600 caaaaacttq agaattacat tqtqqaaaac atqaaqtcqq agatgqccca gatacagcag 660 aatgcagttc agaaccacac ggctaccatg ctggagatag gaaccagcct cctctctcag 720 actgcagage agaccagaaa getgacagat gttgagacee aggtactaaa teaaacttet 780 cqacttqaqa tacaqctqct qqaqaattca ttatccacct acaaqctaqa qaaqcaactt 840 cttcaacaga caaatgaaat cttgaagatc catgaaaaaa acagtttatt agaacataaa 900 atcttaqaaa tqqaaqqaaa acacaaqqaa qaqttqqaca ccttaaaqqa aqaqaaaqaq 960 aaccttcaag qcttggttac tcgtcaaaca tatataatcc aggagctgga aaagcaatta 1020 aacagagcta ccaccaacaa cagtgtcctt cagaagcagc aactggagct gatggacaca 1080 gtccacaacc ttgtcaatct ttgcactaaa gaaggtgttt tactaaaggg aggaaaaaga 1140 gaggaagaga aaccatttag agactgtgca gatgtatatc aagctggttt taataaaagt 1200 ggaatctaca ctatttatat taataatatg ccagaaccca aaaaggtgtt ttgcaatatg 1260 gatgtcaatg ggggaggttg gactgtaata caacatcgtg aagatggaag tctagatttc 1320 caaaqaqqct qqaaqqaata taaaatqqqt tttqqaaatc cctccqqtqa atattqqctq 1380 gggaatgagt ttatttttgc cattaccagt cagaggcagt acatgctaag aattgagtta 1440 atggactggg aagggaaccg agcctattca cagtatgaca gattccacat aggaaatgaa 1500

```
aagcaaaact ataggttgta tttaaaaggt cacactggga cagcaggaaa acagagcagc 1560 ctgatcttac acggtgctga tttcagcact aaagatgctg ataatgacaa ctgtatgtgc 1620 aaatgtgccc tcatgttaac aggaggatgg tggtttgatg cttgtggccc ctccaatcta 1680 aatggaatgt tctatactgc gggacaaaac catggaaaac tgaatgggat aaagtggcac 1740 tacttcaaag ggcccagtta ctccttacgt tccacaacta tgatgattcg acctttagat 1800 ttttgaaagc gcaatgtcag aagcgattat gaaagcaaca aagaaatccg gagaagctgc 1860 caggtgagaa actgttgaa aacttcagaa gcaaacaata ttgtctccct tccagcaata 1920 agtggtagtt atgtgaagtc accaaggttc ttgaccgtga atctggagcc gtttgagttc 1980 acaagagtct ctacttgggg tgacagtgct cacgtggctc gactatagaa aactccactg 2040 actgtcggcc tttaaaaagg gaagaaactg ctgagcttgc tgtgcttcaa actactactg 2100 gaccttattt tggaactatg gtagccagat gataaatatg gttaatttc 2149
```

<210> 2

. .

<211> 498

<212> PRT

<213> Homo sapiens

<400> 2

Met Thr Val Phe Leu Ser Phe Ala Phe Leu Ala Ala Ile Leu Thr His

1 5 10 15

Ile Gly Cys Ser Asn Gln Arg Arg Ser Pro Glu Asn Ser Gly Arg Arg

Tyr Asn Arg Ile Gln His Gly Gln Cys Ala Tyr Thr Phe Ile Leu Pro  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Glu His Asp Gly Asn Cys Arg Glu Ser Thr Thr Asp Gln Tyr Asn Thr
50 55 60

Asn Ala Leu Gln Arg Asp Ala Pro His Val Glu Pro Asp Phe Ser Ser 65 70 75 80

Gln Lys Leu Gln His Leu Glu His Val Met Glu Asn Tyr Thr Gln Trp 85 90 95

Leu Gln Lys Leu Glu Asn Tyr Ile Val Glu Asn Met Lys Ser Glu Met 100 105 110

Ala Gln Ile Gln Gln Asn Ala Val Gln Asn His Thr Ala Thr Met Leu 115 120 125

Glu Ile Gly Thr Ser Leu Leu Ser Gln Thr Ala Glu Gln Thr Arg Lys 130 135 140

Leu Thr Asp Val Glu Thr Gln Val Leu Asn Gln Thr Ser Arg Leu Glu 145 150 155 160

385

Ile Gln Leu Leu Glu Asn Ser Leu Ser Thr Tyr Lys Leu Glu Lys Gln 165 170 Leu Leu Gln Gln Thr Asn Glu Ile Leu Lys Ile His Glu Lys Asn Ser 180 185 Leu Leu Glu His Lys Ile Leu Glu Met Glu Gly Lys His Lys Glu Glu 200 Leu Asp Thr Leu Lys Glu Glu Lys Glu Asn Leu Gln Gly Leu Val Thr 215 Arg Gln Thr Tyr Ile Ile Gln Glu Leu Glu Lys Gln Leu Asn Arg Ala 225 230 235 240 Thr Thr Asn Asn Ser Val Leu Gln Lys Gln Gln Leu Glu Leu Met Asp 250 255 245 Thr Val His Asn Leu Val Asn Leu Cys Thr Lys Glu Gly Val Leu Leu 260 265 270 Lys Gly Gly Lys Arg Glu Glu Glu Lys Pro Phe Arg Asp Cys Ala Asp 275 2ΰû 265 Val Tyr Gln Ala Gly Phe Asn Lys Ser Gly Ile Tyr Thr Ile Tyr Ile 290 295 Asn Asn Met Pro Glu Pro Lys Lys Val Phe Cys Asn Met Asp Val Asn 305 310 315 Gly Gly Gly Trp Thr Val Ile Gln His Arg Glu Asp Gly Ser Leu Asp 325 330 Phe Gln Arg Gly Trp Lys Glu Tyr Lys Met Gly Phe Gly Asn Pro Ser 345 340 Gly Glu Tyr Trp Leu Gly Asn Glu Phe Ile Phe Ala Ile Thr Ser Gln 360 Arg Gln Tyr Met Leu Arg Ile Glu Leu Met Asp Trp Glu Gly Asn Arg 375 Ala Tyr Ser Gln Tyr Asp Arg Phe His Ile Gly Asn Glu Lys Gln Asn

Tyr Arg Leu Tyr Leu Lys Gly His Thr Gly Thr Ala Gly Lys Gln Ser

395

415

410

390

405

Ser Leu Ile Leu His Gly Ala Asp Phe Ser Thr Lys Asp Ala Asp Asn 420 425 430

Asp Asn Cys Met Cys Lys Cys Ala Leu Met Leu Thr Gly Gly Trp Trp
435 440 445

Phe Asp Ala Cys Gly Pro Ser Asn Leu Asn Gly Met Phe Tyr Thr Ala 450 455 460

Gly Gln Asn His Gly Lys Leu Asn Gly Ile Lys Trp His Tyr Phe Lys 465 470 475 480

Gly Pro Ser Tyr Ser Leu Arg Ser Thr Thr Met Met Ile Arg Pro Leu
485 490 495

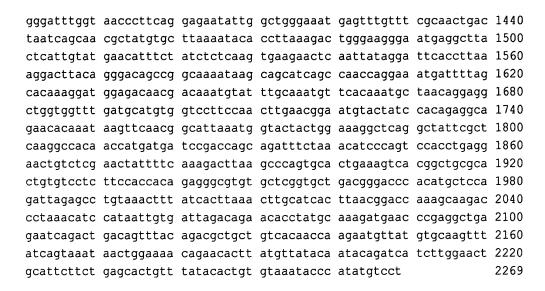
Asp Phe

<210> 3 <211> 2269 <212> DNA

<213> ňomo sapiens

<400> 3

tgggttggtg tttatctcct cccagccttg agggagggaa caacactgta ggatctgggg 60 agagaggaac aaaggaccgt gaaagctgct ctgtaaaagc tgacacagcc ctcccaagtg 120 aqcaqqactq ttcttcccac tqcaatctga cagtttactg catgcctgga gagaacacag 180 caqtaaaaac caggtttgct actggaaaaa gaggaaagag aagactttca ttgacggacc 240 caqccatqqc aqcqtaqcaq ccctqcqttt caqacqqcaq caqctcggga ctctggacgt 300 gtgtttgccc tcaagtttgc taagctgctg gtttattact gaagaaagaa tgtggcagat 360 tqttttcttt actctqaqct qtqatcttqt cttggccgca gcctataaca actttcggaa 420 qaqcatqqac aqcataqqaa aqaaqcaata tcaggtccag catgggtcct gcagctacac 480 tttcctcctg ccagagatgg acaactgccg ctcttcctcc agcccctacg tgtccaatgc 540 tgtgcagagg gacgcgccgc tcgaatacga tgactcggtg cagaggctgc aagtgctgga 600 gaacatcatg gaaaacaaca ctcagtggct aatgaagctt gagaattata tccaggacaa 660 catgaagaaa gaaatggtag agatacagca gaatgcagta cagaaccaga cggctgtgat 720 gatagaaata gggacaaacc tgttgaacca aacagctgag caaacgcgga agttaactga 780 tqtqqaaqcc caaqtattaa atcaqaccac qaqacttqaa cttcaqctct tggaacactc 840 cctctcgaca aacaaattgg aaaaacagat tttggaccag accagtgaaa taaacaaatt 900 qcaaqataaq aacagtttcc tagaaaagaa ggtgctagct atggaagaca agcacatcat 960 ccaactacag tcaataaaag aagagaaaga tcagctacag gtgttagtat ccaagcaaaa 1020 ttccatcatt gaagaactag aaaaaaaaat agtgactgcc acggtgaata attcagttct 1080 tcaaaaqcaq caacatqatc tcatqqaqac aqttaataac ttactgacta tgatgtccac 1140 atcaaactca gctaaggacc ccactgttgc taaagaagaa caaatcagct tcagagactg 1200 tgctgaagta ttcaaatcag gacacaccac aaatggcatc tacacgttaa cattccctaa 1260 ttctacagaa gagatcaagg cctactgtga catggaagct ggaggaggcg ggtggacaat 1320 tattcagcga cgtgaggatg gcagcgttga ttttcagagg acttggaaag aatataaagt 1380



<210> 4

<211> 496

<212> PRT

<213> Homo sapiens

<400> 4

Met Trp Gln Tle Val Phe Phe Thr Leu Ser Cys Asp Leu Val Leu Ala 1 5 10 15

Ala Ala Tyr Asn Asn Phe Arg Lys Ser Met Asp Ser Ile Gly Lys Lys
20 25 30

Gln Tyr Gln Val Gln His Gly Ser Cys Ser Tyr Thr Phe Leu Leu Pro 35 40 45

Glu Met Asp Asn Cys Arg Ser Ser Ser Ser Pro Tyr Val Ser Asn Ala 50 60

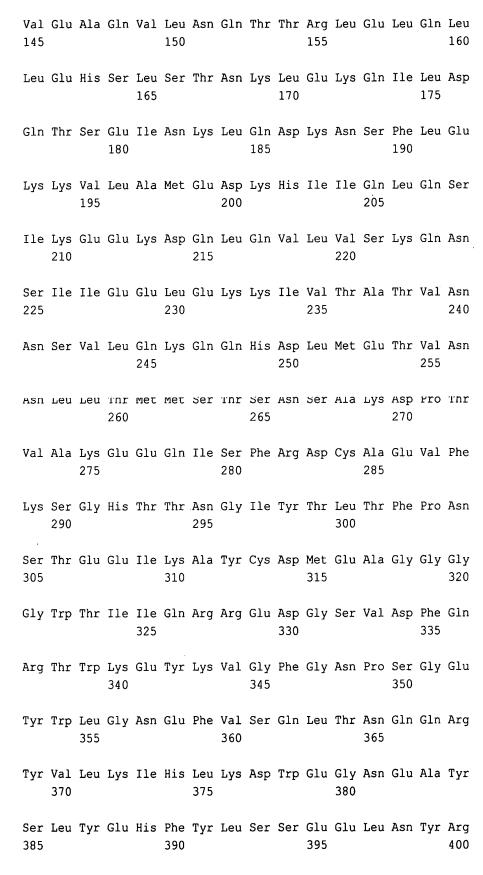
Val Gln Arg Asp Ala Pro Leu Glu Tyr Asp Asp Ser Val Gln Arg Leu 65 70 75 80

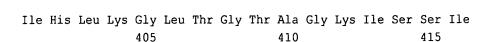
Gln Val Leu Glu Asn Ile Met Glu Asn Asn Thr Gln Trp Leu Met Lys 85 90 95

Leu Glu Asn Tyr Ile Gln Asp Asn Met Lys Lys Glu Met Val Glu Ile  $100 \hspace{1cm} 105 \hspace{1cm} 110$ 

Gln Gln Asn Ala Val Gln Asn Gln Thr Ala Val Met Ile Glu Ile Gly
115 120 125

Thr Asn Leu Leu Asn Gln Thr Ala Glu Gln Thr Arg Lys Leu Thr Asp 130 135 140





Ser Gln Pro Gly Asn Asp Phe Ser Thr Lys Asp Gly Asp Asn Asp Lys 420 425 430

Cys Ile Cys Lys Cys Ser Gln Met Leu Thr Gly Gly Trp Trp Phe Asp 435 440 445

Ala Cys Gly Pro Ser Asn Leu Asn Gly Met Tyr Tyr Pro Gln Arg Gln 450 455 460

Asn Thr Asn Lys Phe Asn Gly Ile Lys Trp Tyr Tyr Trp Lys Gly Ser 470 475 480

Gly Tyr Ser Leu Lys Ala Thr Thr Met Met Ile Arg Pro Ala Asp Phe 485 490 495

<210> 5 <211> 495 <212> PRT

<213> Homo sapiens

<400> 5

Met Trp Gln Ile Val Phe Phe Thr Leu Ser Cys Asp Leu Val Leu Ala 1 5 10 15

Ala Ala Tyr Asn Asn Phe Arg Lys Ser Met Asp Ser Ile Gly Lys Lys 20 25 30

Gln Tyr Gln Val Gln His Gly Ser Cys Ser Tyr Thr Phe Leu Leu Pro 35 40 45

Glu Met Asp Asn Cys Arg Ser Ser Ser Ser Pro Tyr Val Ser Asn Ala 50 60

Val Gln Arg Asp Ala Pro Leu Glu Tyr Asp Phe Ser Ser Gln Lys Leu 65 70 75 80

Gln His Leu Glu His Val Met Glu Asn Tyr Thr Gln Trp Leu Gln Lys 85 90 95

Leu Glu Asn Tyr Ile Val Glu Asn Met Lys Ser Glu Met Ala Gln Ile

100 105 110

Gln	Gln	Asn 115	Ala	Val	Gln	Asn	His 120	Thr	Ala	Thr	Met	Leu 125	Glu	Ile	Gly
Thr	Ser 130	Leu	Leu	Ser	Gln	Thr 135	Ala	Glu	Gln	Thr	Arg 140	Lys	Leu	Thr	Asp
Val 145	Glu	.Thr	Gln	Val	Leu 150	Asn	Ġln	Thr	Ser	Arg 155	Leu	Glu	Ile	Gln	Leu 160
Leu	Glu	Asn	Ser	Leu 165	Ser	Thr	Tyr	Lys	Leu 170	Glu	Lys	Gln	Leu	Leu 175	Gln
Gln	Thr	Asn	Glu 180	Ile	Leu	Lys	Ile	His 185	Glu	Lys	Asn	Ser	Leu 190	Leu	Glu
His	Lys	Ile 195	Leu	Glu	Met	Glu	Gly 200	Lys	His	Lys	Glu	Glu 205	Leu	Asp	Thr
Leu	Lys 210	Glu	Glu	Lys	Glu	Asn 215	Leu	Gln	Gly	Leu	Val 220	Thr	Arg	Gln	Thr
Tyr 225	Ile	Ile	Gln	Glu	Leu 230	Glu	Lys	Gln	Leu	Asn 235	Arg	Ala	Thr	Thr	Asn 240
Asn	Ser	Val	Leu	Gln 245	Lys	Gln	Gln	Leu	Glu 250	Leu	Met	Asp	Thr	Val 255	His
Asn	Leu	Val	Asn 260	Leu	Ser	Thr	Lys	Glu 265	Gly	Val	Leu	Leu	Lys 270	Gly	Gly
Lys	Arg	Glu 275	Glu	Glu	Lys	Pro	Phe 280	Arg	Asp	Cys	Ala	Asp 285	Val	Tyr	Gln
Ala	Gly 290	Phe	Asn	Lys	Ser	Gly 295	Ile	Tyr	Thr	Ile	Tyr 300	Ile	Asn	Asn	Met
Pro 305	Glu	Pro	Lys	Lys	Val 310	Phe	Cys	Asn	Met	Asp 315	Val	Asn	Gly	Gly	Gly 320
Trp	Thr	Val	Ile	Gln 325	His	Arg	Glu	Asp	Gly 330	Ser	Leu	Asp	Phe	Gln 335	Arg
Gly	Trp	Lys	Glu 340	Tyr	Lys	Met	Gly	Phe 345	Gly	Asn	Pro	Ser	Gly 350	Glu	Tyr
Trp	Leu	Gly	Asn	Glu	Phe	Ile	Phe	Ala	Ile	Thr	Ser	Gln	Arg	Gln	Tyr

355 360 365

Met Leu Arg Ile Glu Leu Met Asp Trp Glu Gly Asn Arg Ala Tyr Ser 370 375 380

Gln Tyr Asp Arg Phe His Ile Gly Asn Glu Lys Gln Asn Tyr Arg Leu 385 390 395 400

Tyr Leu Lys Gly His Thr Gly Thr Ala Gly Lys Gln Ser Ser Leu Ile 405 410 415

Leu His Gly Ala Asp Phe Ser Thr Lys Asp Ala Asp Asn Asp Asn Cys
420 425 430

Met Cys Lys Cys Ala Leu Met Leu Thr Gly Gly Trp Trp Phe Asp Ala 435 440 445

Cys Gly Pro Ser Asn Leu Asn Gly Met Phe Tyr Thr Ala Gly Gln Asn 450 455 460

His Gly Lys Leu Asn Gly Ile Lys Trp His Tyr Phe Lys Gly Pro Ser 465 470 475 480

Tyr Ser Leu Arg Ser Thr Thr Met Met Ile Arg Pro Leu Asp Phe 485 490 495